

PERLITE

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In 2002, the amount of domestic processed and expanded perlite sold and used decreased compared with that of 2001. Imports rose substantially, while exports decreased slightly compared with those of 2001. Increasing imports combined with weak demand from some construction markets had a substantial negative impact on many domestic perlite mining operations. Demand decreased primarily for formed construction products as well as for laundries (stone washing) and plaster aggregate.

Production

According to the data collected by the U.S. Geological Survey (USGS), the amount of U.S.-processed perlite sold or used decreased by about 11.4% to 521,000 metric tons (t) in 2002 compared with that of 2001. The value of processed perlite sold or used decreased by 11.1% to \$19 million compared with that of 2001. The amount of expanded perlite sold or used by domestic producers decreased by 3% to 672,000 t compared with that of 2001, but the associated value remained about \$146 million (table 1).

Domestic production data for perlite are derived by the USGS from two voluntary annual surveys—one for domestic mine operations (processed perlite) and one for expanding plants. The expanding plants consume domestic and imported processed perlite. All the processed perlite included in table 1 was produced by 10 mines operated by 8 companies; 8 of the 10 operations responded to the USGS survey, representing about 92% of the processed perlite sold or used in 2002. The perlite was mined in Arizona, California, Idaho, Nevada, New Mexico, Oregon, and Utah. The mines in New Mexico and Oregon accounted for most of the tonnage mined. Ore producers were Harborlite Corp. in Arizona and New Mexico; American Perlite Co. in California; Idaho Minerals LLC in Idaho; Eagle-Picher Minerals, Inc. and Wilkins Mining and Trucking, Inc. in Nevada; Cornerstone Industrial Minerals Corp. in Oregon; Dicaparl Corp. in New Mexico; and Basin Perlite Co. in Utah. Of the 64 expanding operations canvassed, 63 were active. Of those, 43 operations (68%) responded, reporting about 78% of the total expanded perlite sold or used (table 1). The top seven producers of expanded perlite, each with production of more than 25,000 metric tons per year, accounted for about 81% of expanded perlite sold or used in the United States in 2002. The remaining 19% was produced by 27 companies.

Consumption

Domestic apparent consumption is defined as U.S.-processed perlite sold and used plus imports minus exports. In 2002, domestic apparent consumption of processed perlite was 705,000 t, a 2.1% decrease compared with that of 2001. Consumption of expanded perlite for construction-related uses, which was the major market for expanded material, decreased by 8.3% to 427,000 t. Construction uses of expanded perlite, which consisted of concrete aggregate, formed products, masonry- and cavity-fill insulation, and plaster aggregate, accounted for about 64% of total domestic sales in 2002. Expanded perlite consumption increased for concrete aggregate, fillers, filter aid, horticultural aggregate, low-temperature insulation, masonry- and cavity-fill insulation, and miscellaneous uses. Consumption decreased for formed products, laundries, and plaster (table 3). Perlite was expanded, usually for local consumption, in 30 States. The leading States in production of expanded perlite sold or used, in descending order, were Mississippi, Georgia, Illinois, Pennsylvania, Minnesota, Alabama, Virginia, and California (table 2).

Prices

Processed perlite sold at an average value of \$36.04 per metric ton, which was a decrease of about 1.3% compared with that of 2001. Perlite consumed by expanding plants operated by the mining companies was valued at \$38.14 per ton, which was an increase of 7.2% compared with that of 2001. The average price for all perlite sold or used by mining companies was \$36.45 per ton, which was about the same as that of 2001. The average price of expanded perlite was \$217 per ton, up from \$211 per ton in 2001; the range in reported prices, however, was wide—from less than \$100 per ton to more than \$1,000 per ton.

The average prices by use per ton of expanded perlite, in descending order, were laundries, \$464 per ton; fillers, \$410 per ton; low-temperature insulation, \$365 per ton; filter aid, \$323 per ton; concrete aggregate, \$321 per ton; horticultural aggregate, \$312 per ton; plaster aggregate, \$307 per ton; masonry- and cavity-fill insulation, \$243 per ton; and formed products, \$145 per ton (table 3).

Foreign Trade

Exports of processed and expanded perlite, primarily to Canada, were estimated to be 42,000 t, which was slightly lower compared with those of 2001. Imports of processed perlite, almost exclusively from Greece, increased by 28% to about 224,000 t. Import and export data were derived from U.S. Census Bureau data, the Journal of Commerce's Port Import and Export Reporting Service, and

importers and exporters.

World Review

Based on available information, the United States was estimated to be the largest producer and consumer of crude and expanded perlite in 2002. Other leading producers of processed crude perlite, in descending order, were Greece, Japan, Hungary, and Turkey (table 4). In 2002, 13 countries produced 1.65 million metric tons of perlite. Owing to a lack of reliable figures, however, this total does not include several producing countries, such as China, which was probably the largest or second largest producer in the world.

Outlook

Total consumption of expanded perlite and processed perlite in the United States is expected to increase slightly in 2002. Growth in imports of processed perlite is expected to slow the growth of domestic processed perlite sales. The growth in Canadian horticultural perlite demand however, may result in increased exports of domestic processed perlite. The newer mines opened during the past 5 years, and continued growth in imports is expected to continue to restrain price increases for many grades of processed perlite.

GENERAL SOURCES OF INFORMATION

U.S. Geological Survey Publications

Lightweight Aggregates. Ch. in United States Mineral Resources, Professional Paper 820, 1973.

Perlite. Ch. in Mineral Commodity Summaries, annual.

Other

Bates, R.L., 1969, Geology of the industrial rocks and minerals: New York, NY, Dover Publications Inc., 459 p.

Harben, P.W., and Bates, R.L., 1990, Industrial minerals—Geology and world deposits: Surrey, United Kingdom, Metal Bulletin plc, 312 p.

Industrial Minerals Magazine.

Perlite. Ch. in Mineral Facts and Problems, U.S. Bureau of Mines Bulletin 675, 1985.

TABLE 1
 PERLITE MINED, PROCESSED, EXPANDED, AND SOLD OR USED BY PRODUCERS IN THE UNITED STATES¹

(Thousand metric tons and thousand dollars)

Year	Perlite mined ²	Processed perlite					Expanded perlite		
		Sold to expanders		Used at own plant to make expanded material		Total quantity sold or used	Quantity produced	Sold or used	
				Quantity	Value			Quantity	Value
1998	832	583	18,800	102	3,060	685	738	736	148,000
1999	821	619	20,700	92	3,050	711	731	729	148,000
2000	873	570	19,600	101	3,100	672	715	715	148,000
2001	611	490	17,900	97	3,450	588	686	693	146,000
2002	638	419	15,100	102	3,890	521	674	672	146,000

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Crude ore mined and stockpiled for processing.

TABLE 2
EXPANDED PERLITE PRODUCED AND SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE¹

State	2001				2002			
	Quantity produced (metric tons)	Sold or used		Average value per ton ²	Quantity produced (metric tons)	Sold or used		Average value per ton ²
		Quantity (metric tons)	Value (thousands)			Quantity (metric tons)	Value (thousands)	
California	30,300	30,300	\$10,700	\$352	38,400	38,400	\$13,400	\$348
Florida	30,800	30,700	7,880	256	29,800	28,800	7,650	265
Michigan	21,000	21,000	4,860	232	20,600	20,600	4,810	233
Mississippi	123,000	123,000	16,100	130	93,700	93,700	12,900	137
Pennsylvania	49,000	49,000	8,140	166	49,300	49,300	8,270	167
Other ³	431,000 ^r	438,000 ^r	98,800 ^r	225 ^r	443,000	441,000	99,400	225
Total or average	686,000	693,000	146,000	211	674,000	672,000	146,000	217

^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Average value is based on unrounded data and rounded to nearest dollar.

³Includes Alabama, Arizona, Arkansas, Colorado, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Maine, Massachusetts, Minnesota, Missouri, Nevada, New Jersey, North Carolina, Ohio, Oklahoma, Oregon, Tennessee, Texas, Utah, Virginia, Wisconsin, and Wyoming.

TABLE 3
EXPANDED PERLITE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY USE¹

Use	2001			2002		
	Quantity (metric tons)	Value (thousands)	Average value per ton ²	Quantity (metric tons)	Value (thousands)	Average value per ton ²
Concrete aggregate	3,280	\$980	\$299	4,050	\$1,300	\$321
Fillers	54,400	22,000	404	57,300	23,500	410
Filter aid	56,800	18,200	321	57,500	18,600	323
Formed products ³	452,000	65,800	146	415,000	60,200	145
Horticultural aggregate	81,000	25,900	320	89,400	27,800	312
Laundries	2,440	750	307	1,560	723	464
Low-temperature insulation	1,750	635	363	4,230	1,550	365
Masonry and cavity-fill insulation	4,880	1,780	365	5,500	1,340	243
Plaster aggregate	5,750	1,530	266	2,620	803	307
Other ⁴	30,900	8,860	287 ^r	35,000	10,600	303
Total or average	693,000	146,000	211	672,000	146,000	217

^rRevised.

¹Data are rounded to no more than three significant digits, except average value; may not add to totals shown.

²Average value is based on unrounded data and rounded to nearest dollar.

³Includes acoustic ceiling panels, pipe insulation, roof insulation board, and unspecified formed products.

⁴Includes explosives, high-temperature insulation, paint, refractory, soap, steel, sugar manufacture, and various nonspecified industrial uses.

TABLE 4
PERLITE: WORLD PRODUCTION, BY COUNTRY ^{1, 2}

(Metric tons)

Country ³	1998	1999	2000	2001	2002 ^e
Armenia ^e	35,000	35,000	35,000	35,000	35,000
Australia ^{e, 4}	5,000	5,000	5,000	5,000	5,000
Greece, screened	500,000	435,431	360,000	360,000 ^e	360,000
Hungary ^{e, 4}	130,000	148,000	150,000	151,000 ^r	150,000
Iran	13,320	15,069	15,000 ^e	15,000 ^e	15,000
Italy ^e	60,000	60,000	60,000	60,000	60,000
Japan ^e	251,400 ^{r, 5}	260,000	250,000	250,000	250,000
Mexico ⁴	54,840	61,596	68,702	80,297 ^r	80,000
Philippines	6,356	10,265	5,650 ^e	6,000	6,000
Slovakia	24,200 ^e	19,460	17,020	15,000 ^r	15,000
South Africa ^e	400	400	400	400	400
Turkey ⁴	124,312	147,818	149,429	150,000 ^e	150,000
United States ⁶	685,000	711,000	672,000	588,000	521,000 ⁵
Total	1,890,000	1,910,000	1,790,000	1,720,000 ^r	1,650,000

^eEstimated. ^rRevised.

¹World totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

²Unless otherwise stated, figures represent processed ore output. Table contains data available through May 20, 2003. Revised July 30, 2003.

³In addition to the countries listed, Algeria, Bulgaria, China, Iceland, and Mozambique are believed to have produced perlite, but output is not reported, and available information is inadequate for the formulation of reliable estimates of output level.

⁴Crude ore.

⁵Reported figure.

⁶Processed ore sold and used by producers.